UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, PA 19103-2029

June 23, 2021

Via Email

Mr. Scott Cullinan, PE
President
Evergreen Resources Management Operations
2 Righter Parkway, Suite 200
Wilmington, DE 19803

Subject: Request for Interim Measures Work Plan for AOI7

Dear Mr. Cullinan:

EPA has reviewed the various documents related to the investigation of arsenic at the Marcus Hook Industrial Complex (MHIC) Area of Interest 7 (AOI 7) submitted by Evergreen (dated December 14, 2020; April 13, 2021; and an email from Sanborn Head dated May 20, 2021). In addition, EPA reviewed data and other information regarding AOI 7 and the adjacent Delaware Valley Works Facility (DVW) (South Plant and SWMU 9), including:

- Ethylene Complex History of Landfilling (May 1989)
- AOI 7 RFI Report (June 7, 2017)
- SWMU 9 Data Summary Report (April 29, 2020)
- SWMU 9 Geotechnical Report (June 2019)
- US Army Corps of Engineers Pore Water Sampling Event (January 2019)
- Revised Potentiometric Map, November 14, 2018 – from SWMU 9 Geotechnical Investigation Report

Based on review of the aforementioned documents and data since EPA's letter issued April 25, 2018, EPA has determined that arsenic concentrations in groundwater within AOI 7 discharge to sediment in the Delaware River adjacent to the southwest corner of AOI 7. This discharge is causing sediment porewater to exceed a porewater corrective action objective EPA established for arsenic.

Therefore, EPA is requesting that within **45 days** of receipt of this letter, Evergreen submit an Interim Measures (IM) Work Plan for implementing IM at AOI 7 to achieve the following corrective action objectives:

1. Prevent discharge of arsenic in groundwater to porewater above 1,253 ug/L and
2. Achieve a porewater arsenic concentration of 1,253 ug/L or less.

The IM Work Plan should follow the IM Scope of Work, available at: https://www.epa.gov/sites/production/files/2016-03/documents/rcra_interimmeasurestta.pdf. The IM Work Plan should identify potential interim remedies that will be considered and evaluated to achieve the corrective action objectives. The work plan should provide a detailed schedule for proposing a specific IM and a timeframe for implementation once approved by EPA.

The IM Work Plan should also include the following additional investigation work that Evergreen has proposed:

1. 10 soil borings within AOI 7 (as shown on Figure 1 attached to May 20, 2021 email);
2. A survey of Middle Creek to confirm Middle Creek stream bed elevation;
3. Establish a staff gauge in Middle Creek for surface water elevation measurements;
4. Collect groundwater and surface water elevations from all monitoring wells in the South Parcel, SWMU 9, and AOI 7 (as shown on Figure 2 attached to May 20, 2021 email); and
5. Complete one groundwater sampling event from AOI 7 monitoring wells and monitoring wells on South Parcel and SWMU 9, for arsenic, iron, and field parameters.

In addition, EPA has determined that additional work must be performed to identify extent of arsenic in porewater and sediment, delineate the horizontal and vertical distribution of arsenic and NAPL in groundwater, and to assist in the development of an IM to control the discharge of arsenic in groundwater. That additional work must also be included in the IM Work Plan and is as follows:

1. Sample porewater and sediment in front of AOI 7. Delineate the areal extent of arsenic in porewater that exceeds 1,253 ug/L. Delineate the areal extent of arsenic in sediment to 170 mg/kg;
2. Install additional wells within AOI 7 (some nested wells at new locations, others to add a deep well to pair with existing shallow wells) to delineate NAPL and further delineate the horizontal and vertical extent of arsenic in groundwater as follows:
    a. New nested well ½ way between MW-562 and MW-534L
    b. New nested well ½ way between MW-558 and MW-534L
    c. New nested well ½ way between AOI7-BH-15-019 and MW-561
    d. New nested well on eastern side of Middle Creek, between MW-560 and MW-532L
    e. New deep wells to pair with MW-560, MW-509, MW-558, MW-293, MW-56;
3. Perform soil sampling including TPH DRO & GRO if field data indicates presence of hydrocarbons;
4. Collect soil samples in all new deep well locations, following the same procedure as for the proposed soil borings (i.e., sample collection every 5 feet, etc.); and
5. Provide specifics on the timing of groundwater sampling, related to the tidal cycle, to ensure that collected groundwater samples and water elevations are representative of groundwater conditions during discharge to the Delaware River (low tide).

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Please also note that nothing in this letter waives any enforcement authorities EPA may have under applicable federal laws and regulations.

If you would like to discuss this matter or have questions, please contact Kevin Bilash at 215-814-2796 or bilash.kevin@epa.gov.

Sincerely,

DANA AUNKST

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Dana Aunkst, Director
Land, Chemicals, and Redevelopment Division

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